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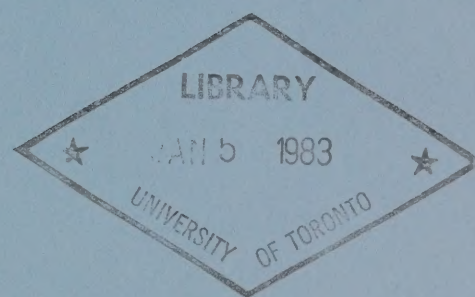


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NATIONAL ENERGY BOARD REASONS FOR DECISION

On Review of a Decision on Part 3 of
the Application under
the National Energy Board Act

of



The New Brunswick Electric Power Commission

December 1982

NATIONAL ENERGY BOARD

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THE NEW BRUNSWICK ELECTRIC POWER COMMISSION

December 1982

Ce rapport est publié
séparément dans les
deux langues officielles

(i)

National Energy Board

IN THE MATTER OF the National Energy Board Act
and the Regulations thereunder; and

IN THE MATTER OF an application by The New
Brunswick Electric Power Commission for Orders
and Licenses pursuant to Part VI of the said
Act, filed under File Number 1923-4/N7-9; and

IN THE MATTER OF an application by The New
Brunswick Electric Power Commission, pursuant
to Section 17 of the National Energy Board
Act, for a review and variance of the Board's
decision on Part 3 of the application for
Orders and Licenses.

HEARD AT FREDERICTON, New Brunswick on 8 and
9 November 1982.

BEFORE:

R.F. Brooks	)	Presiding Member
J. Farmer	)	Member
J.L. Trudel	)	Member

APPEARANCES:

W. Davidson	)	The New Brunswick Electric Power
P. Creaghan	)	Commission
I. Blue)	
G.R. Cluney	)	Canadian Manufacturers Association
N. Aspin	)	Canadian Nuclear Association
J. Foster)	
A. Secord	)	Conservation Council of New Brunswick
G.E. Daly	)	Himself
J. Brown	)	Fredericton Branch of the Maritime Energy Coalition
T.H. Good	)	New Democratic Party of New Brunswick
J.J. Donahue	)	The Power Commission of the City of Saint John
R.M. Bell	)	The Rocca Group Limited
K. Bedell	)	Voice of Women, Fredericton Branch
P.A. MacNutt)	Province of New Brunswick
S. Fraser)	National Energy Board
R. Makuch)	

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Abbreviations

Units of Measurement

MW	- megawatt (1 000 kW)
GW.h	- gigawatt hour (1 000 000 kW.h)
kW.h	- kilowatthour

Names

Applicant	- The New Brunswick Electric
NB Power	- Power Commission
Board	- National Energy Board
NEB	-
Commonwealth	- Commonwealth Electric Company
d.c.	- direct current
Lepreau	- Point Lepreau CANDU unit No. 1
MMWEC	- Massachusetts Municipal Wholesale Electric Company
NEB Act	- National Energy Board Act
November 1980 Application, or 1981 hearing	- An application dated 19 November 1980, as amended, heard at a public hearing held in November and December 1981 at Fredericton, New Brunswick.
March 1982 Decision	- National Energy Board Reasons for Decision in the Matter of an Application under the National Energy Board Act of The New Brunswick Electric Power Commission, March 1982.
July 1982 Application	- An application dated 23 July 1982, heard at a public hearing in November 1982 at Fredericton, New Brunswick.

Background

In an application dated 19 November 1980, as amended 16 June 1981, 29 July 1981, 13 November 1981, and during a public hearing held in Fredericton, on 24, 25, 26, 27, and 30 November and 1 and 2 December 1981 ("the November 1980 Application", "the 1981 hearing"), N.B. Power applied for ten licences to export electric power and energy.

A complete summary of the evidence presented and the disposition of the Board was published in the Reasons for Decision dated March 1982 ("the March 1982 Decision").

In its March 1982 Decision, the Board granted Parts 1, 2, 4, 5, 6, 7, 8, 9, and 10 of the application and export licences EL-137, EL-138, EL-139, EL-140, EL-141, EL-142, EL-143, EL-144, and EL-145 were issued and approved by the Governor in Council.

The Board denied Part 3 of the November 1980 Application which was for a licence to export from Point Lepreau an additional maximum of 130 MW of firm power and up to 1 138 GW.h of firm energy in any consecutive twelve-month period for the period beginning 1 November 1981 and ending 31 October 1995 to parties and under terms and conditions to be approved by the Board.

Three of the new licences authorized the export of a total of 205 MW of Lepreau unit participation power. Contracts for export sales beyond the 205 MW had not been executed at the time of the 1981 hearing. Apart from that, the Board was unconvinced by the evidence before it that there would not be a disproportionate increase of costs in Canada associated with the sale of an extra portion of Point Lepreau power, i.e., of another 130 MW. The Board was also not convinced that the additional reduction in financial risk associated with a further 130 MW export would warrant the additional cost likely to be incurred by New Brunswick and Canada. Even the need for a further reduction in financial risk beyond that associated with the 205 MW sale was not, in the Board's view, established by the evidence submitted in the 1981 hearing.

In an application dated 23 July 1982, heard at a public hearing in November 1982 at Fredericton, ("the July 1982 Application"), NB Power sought a variance of the decision on Part 3, pursuant to Section 17 of the NEB Act. In addition, NB Power applied to the Board for approval of two agreements with Commonwealth Electric Company and Massachusetts Municipal Wholesale

Electric Company under which a portion of the additional export of 130 MW described above would be made. These agreements are summarized in Appendix 1.

Submissions and Evidence

THE APPLICANT

Estimates of generating capacity available on the NB Power system and estimates of demand, reserves, and surplus for the years 1980-95 were stated by NB Power to be unchanged from the estimates used in the November 1980 Application.

A witness for NB Power stated that the utility had an updated demand forecast under preparation which would show about 1/4 percent per year lower rate of growth in demand than previously forecast.

By letter of intent dated 15 December 1981, Hydro-Quebec and NB Power agreed to construct an additional interconnection between their systems by a converter-inverter installation to be known as Madawaska Station. The capacity of the new interconnection will be 350 MW, which, together with rearrangement of system load in the Edmundston area, will increase the capacity to transmit energy between the provinces by more than 100 percent when it is placed in service on or before October 1985.

A witness for NB Power stated that Hydro-Quebec expected to have large quantities of surplus energy available in the future and that NB Power planned to make large purchases from that surplus. This energy would be used in New Brunswick to the full extent of its availability and would also replace a large portion of the proposed export of 130 MW of Lepreau power.

NB Power supplied a new forecast of heavy fuel oil prices, in current Canadian dollars, for the period 1982-95. A year ago oil prices were forecast to advance fairly steadily from \$30 per barrel in March 1983, to \$45.95 per barrel in September 1985, and to \$72.48 per barrel in September 1990. In the new forecast prices would increase from \$30.35 per barrel in March 1983 to \$32.82 per barrel in September 1985, and to \$72.94 per barrel in September 1990. The evidence showed that as a result of the slight increase in oil prices now anticipated in the period 1980 to 1985, the amount of federal government oil compensation payments in that period would be small.

NB Power stated that the export market for electricity has become more competitive during

the past year. Heavy fuel oil prices have fallen somewhat resulting in the availability of more economical sources of supply to the United States utilities. At the same time delays in the start-up of Lepreau have led to cost increases which will result in higher prices being charged for exported power. The witness for Commonwealth estimated its least cost alternative supplies at four U.S. cents per kW.h today. The witness stated that his company was willing to pay more for power from Lepreau than the least cost alternative price in order to lessen dependence on foreign oil and to gain economic benefits in the later years of the contract. Commonwealth would require some capacity in the years 1987-90, so its purchases were not solely for energy displacement. The witness for MMWEC estimated its United States least cost alternative energy costs at 4.1-4.3 U.S. cents per kW.h in 1982 rising to 6-6.5 cents in two or three years time. The 1984 alternative costs would be based on either natural gas or oil, depending upon the generation sources which become available.

A witness for the Applicant testified that unit participation agreements with the United States utilities had been settled following extensive negotiations between the parties. NB Power stated it had negotiated the best contractual terms and conditions that the market would bear. Evidence was given that NB Power had no negotiations under way in respect of 70 MW of Lepreau power for which contracts were not yet signed and it attributed this to the very competitive market situation existing in New England.

The evidence provided by the Applicant, summarized in Appendix 2, was that the total revenues to be received for Lepreau power in December 1982 would amount to about 6.5 Cdn. cents/kW.h with the unit operating at expected capacity factors i.e. if no major troubles are experienced with the plant.

The information provided with the November 1980 Application showed that there would be costs to NB Power and Canada associated with the export of unit participation power from Lepreau under most foreseeable operating conditions. New information provided by NB Power showed that the costs of power from Lepreau would be increased due to the later in-service date of the station, but that a proportionate share of these cost increases would be fully recovered from United States purchasers under the terms of the unit participation agreements. The cost of replacing exported nuclear energy would be lower than previously estimated due to lower world oil prices and a lower rate of forecast oil price escalation. Also, the recent signing of the letter of intent

with Hydro-Quebec makes it likely that, following construction of the second d.c. interconnection with Hydro-Quebec, larger quantities of hydroelectric energy will be purchased from Hydro-Quebec at prices lower than the cost of oil-fired energy in the later years of the export contract period.

NB Power seeks to make an additional 130 MW of Lepreau exports to reduce further its financial exposure in the event of possible lengthy shutdowns at Lepreau. If Lepreau operates at expected capacity factors, if oil prices are at, or above, the latest forecast levels, and if the United States utilities exercise all their purchase options, the evidence showed that there would be a small net cost of making an additional 130 MW of exports. If poorer unit performance were experienced, if some options were not exercised, or if oil prices were lower than forecast, there would be a net benefit.

NB Power stated that it sought a "general nuclear export licence" for 130 MW of Lepreau power even though contracts were not likely to be signed in the immediate future for all of this power. The utility stated it wished to be able to seize opportunities which might arise in export markets without being constrained by the requirement to make an export application to the Board in respect of each contract. The power proposed for export would be offered to interconnected Canadian utilities and each contract would be submitted to the Board for approval before exports commenced. NB Power would accept a condition in the requested 130 MW licence that the licence would apply only to contracts completed and submitted to the Board before the end of December 1985.

Counsel for NB Power compared the licence sought by NB Power with a licence for miscellaneous firm power exports held by Ontario Hydro*, and argued that NB Power should be entitled to the licence it has applied for based on the precedent established by the granting of what it considers a comparable licence to Ontario Hydro.

THE INTERVENORS

All individuals and organizations which had made submissions regarding the November 1980 Application were given the opportunity to make a submission in respect of the application for variance. Written submissions were received from approximately 15 individuals and organizations, of which 10 appeared at the hearing.

* Ontario Hydro holds Licence EL-135 for the export of miscellaneous firm power and energy.

Submissions in support of the application were received in writing from several parties which did not appear at the hearing and also in hearing presentations by the Canadian Manufacturers Association, the Canadian Nuclear Association, the Power Commission of the City of Saint John, New Brunswick, the Rocca Group, and the Province of New Brunswick.

Opposition to the granting of the application was expressed by the Conservation Council of New Brunswick, Mr. G. Daly, the Fredericton Branch of the Maritime Energy Coalition, the New Brunswick New Democratic Party, and the Voice of Women, Fredericton Branch. Grounds for opposing the application included doubts as to the validity of oil price forecasts, the uncertainty of future interest and inflation rates, the costs and benefits likely to result from the export of an additional 130 MW of Lepreau power, contractual arrangements entered into with United States utilities, and various matters of moral and political opinion.

Disposition

The Board undertook a review of its March 1982 decision to deny a part of the original application for export licences because it found that NB Power had submitted information indicating a possible significant change in circumstances from those before the Board at the time of the 1981 hearing. The new information did not change the essential thrust and purpose of Part 3 of the November 1980 Application but, rather, appeared to provide substantial additional support for that application.

In arriving at its disposition of the review the Board has relied upon the information supplied with the 23 July 1982 Application and subsequent filings, submissions from intervenors, and evidence adduced and arguments presented at the public hearing in November 1982. In addition the Board has relied upon the corresponding information supplied in connection with the November 1980 Application.

In its March 1982 decision the Board was satisfied that all the power and energy then proposed for export, including 130 MW under Part 3 of the November 1980 Application, was surplus to reasonably foreseeable Canadian requirements and that the incremental environmental impacts and social costs, both for export and for the replacement of Lepreau exports, would be small relative to the values of the exports.

Clearly, the reduced demand and increased supply now expected on the system of NB Power will result in a larger surplus and the Board therefore continues to be satisfied that the 130 MW of Lepreau power proposed for export is surplus to reasonably foreseeable Canadian requirements.

The new evidence showed that demand is likely to grow more slowly in New Brunswick while increased supplies of hydroelectric energy may be obtained from Hydro-Quebec, resulting in lower incremental environmental impacts and social costs than were anticipated previously. Accordingly, the Board continues to be satisfied that the potential incremental environmental impacts and social costs are acceptable.

The forecast of lower oil prices significantly increases the likelihood of lower costs and/or greater benefits from the additional 130 MW of Lepreau unit participation exports over a wider range of operating scenarios than had been the case in evidence presented a year ago.

Whether exports from Lepreau do result in net benefits or net costs depends upon the performance of Lepreau and the actual future course of oil prices. The uncertainty about future oil prices which was expressed by the Board in its March 1982 decision continues. However, the Board is satisfied that the new forecasts are reasonable in the circumstances. The Board is no longer concerned that there might be a disproportionate increase of costs in Canada associated with the sale of an additional 130 MW from Lepreau.

The NEB Act requires the Board to satisfy itself that the price to be charged for the power to be exported is just and reasonable in relation to the public interest. The pricing provisions contained in the contracts with Commonwealth and MMWEC are similar to those contained in the contracts for the 205 MW export authorized by the Board in March 1982. The Applicant suggested that this is the pricing structure which it intends to use in contracts signed prior to the in-service date. The Board found in its March 1982 Decision that this would result in prices which are just and reasonable in relation to the public interest. NB Power testified that contracts entered into subsequent to the in-service date of Lepreau would be on terms more favourable than contracts signed prior to the in-service date. The Board is satisfied that NB Power's pricing formulae and policies as described above will result in prices for power and energy which are just and reasonable in relation to the public interest. As a condition of any licence which might be issued, the Board would require

that contracts be submitted for its approval. In this way, the Board would, for each transaction, satisfy itself that appropriate pricing formulae and policies are followed and that the actual prices to be charged are just and reasonable in relation to the public interest.

The Board, having had regard to all considerations that appear to it to be relevant, is prepared to vary its March 1982 Decision in which it denied Part 3, and is now prepared to issue to NB Power a licence under Part VI of the NEB Act to export up to 130 MW of firm power and up to 1 138 GW.h of firm energy in any consecutive twelve-month period subject to the terms and conditions set out in Appendix 3.

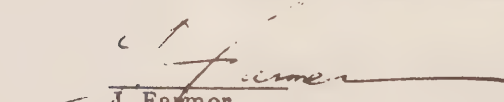
Turning to the two export contracts for which approval was sought, both of these are held in escrow pending the resolution of certain contractual and regulatory matters in the United States. The termination dates of the escrow agreements have been extended several times. Some intervenors voiced concern that the contracts held in escrow lack substance and raised the possibility that they might never become

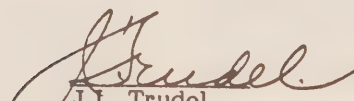
effective or that the contracts might come into effect after the in-service date of Lepreau when different cost/risk factors might apply.

The Board recognizes the competitive nature of the export market for electricity in New England and understands the desire of the Applicant to hold an export licence which will allow for the prompt negotiation of export contracts as opportunities may arise. However, the Board believes that it must examine the terms and conditions of each contract when it is completed and unencumbered by conditions such as escrow. The Board is not prepared, at this time, to approve the Lepreau unit participation agreements entered into by NB Power with Commonwealth Electric Company in respect of 25 MW and with Massachusetts Municipal Wholesale Electric Company in respect of 35 MW. If these agreements become unencumbered by escrow conditions, they may be resubmitted for the Board's approval.

The above constitutes our Decision and Reasons for Decision on the Application for review of the March 1982 Decision on Part 3 of the Application of The New Brunswick Electric Power Commission.


R.F. Brooks
Presiding Member


J. Farmer
Member


J.L. Trudel
Member

SUMMARIES OF AGREEMENTS

This appendix outlines agreements filed by NB Power with its July 1982 Application. Additional information on these and other agreements relevant to the application may be found in Appendix 8 to the March 1982 Decision.

**POINT LEPREAU UNIT PARTICIPATION
AGREEMENT WITH COMMONWEALTH
ELECTRIC COMPANY**

The agreement, dated 12 March 1982, between NB Power and Commonwealth, defines the terms and conditions under which Commonwealth would purchase an entitlement to power and energy from the Point Lepreau generating unit No. 1. Commonwealth would be entitled to four percent of unit output of power and associated energy at the Lepreau Station delivered to the point where the international power line crosses the international boundary in or near the Town of Orient, Maine.

The entitlement would commence on the first day of the calendar month following the in-service date. It would expire on 31 October 1987 with three twelve-month extensions at the option of Commonwealth to 31 October 1990, and with additional conditional extensions to 31 October 1995.

The general terms and conditions of the agreement are similar to those pertaining to the agreement with Boston Edison Company as outlined in Appendix 8 to the March 1982 Decision.

The agreement is held in escrow and will not become effective until Commonwealth obtains certain transmission agreements and approval of the Massachusetts Department of Public Utilities. If these conditions are not met by a certain date the Lepreau unit participation agreement will be considered null and void.

**POINT LEPREAU UNIT PARTICIPATION
AGREEMENT WITH MASSACHUSETTS
MUNICIPAL WHOLES ALEELECTRIC COMPANY**

The agreement, dated 8 July 1982, between NB Power and MMWEC, defines the terms and conditions under which MMWEC would purchase an entitlement to power and energy from the Point Lepreau generating unit No. 1. MMWEC would be entitled to 5.6 percent of unit output but not exceeding 35 MW of power and associated energy at the Lepreau station delivered to the point where the international power line crosses the international boundary in or near the Town of Orient, Maine.

The entitlement would commence on the first day of the calendar month following the in-service date. It would expire on 31 October 1987 with three twelve-month extensions at the option of MMWEC, to 31 October 1990.

The general terms and conditions of the agreement are similar to those pertaining to the 100 MW agreement with MMWEC as outlined in Appendix 8 to the March 1982 Decision.

The agreement is held in escrow pursuant to an agreement, dated 8 July 1982, defining the terms and conditions under which the Bank of Montreal will hold in escrow the 35 MW Lepreau unit participation agreement until MMWEC receives executed Power Purchase Agreements for the resale of the 35 MW and until MMWEC obtains certain effective Transmission Agreements, including regulatory approvals, for an initial term ending 31 October 1984. If these conditions are not met by a certain date the Lepreau unit participation agreement will be considered null and void.

APPENDIX 2

ESTIMATED BILL FOR POINT LEPREAU POWER MONTH OF DECEMBER 1982

		Commonwealth Electric Company 25 MW	MMWEC 35 MW
Total charges based on Gross Capital Investment (\$1.4 billion)	(1)	804,263	1,125,968
Fuel costs:			
- direct fuel costs	(2)	44,639	62,495
- cost of carrying fuel	(3)	3,943	5,522
- spent fuel management cost		14,880	20,832
Carrying cost for heavy water	(3)	3,539	4,954
Operations, Maintenance and indirects		90,290	126,407
Plant decommissioning charge		5,952	8,333
Total		967,506 (4)	1,354,511
Energy Generation (2) kW.h		14,880,000	20,832,000
Cost of Lepreau power cents/kW.h		6.5	6.5

Notes:

- (1) Based on Lepreau in-service date 1 November 1982.
- (2) Based on 80 percent capacity factor.
- (3) Based on 15 percent prime interest rate.
- (4) A unit performance charge is applicable, equal to 2 percent of the Commonwealth Electric portion of participation cost for each 1 percent capacity factor above 80 percent capacity factor per month to a maximum of 10 percent.

TERMS AND CONDITIONS OF EXPORT LICENCE
FIRM POWER AND ENERGY

APPENDIX 3

1. The term of this licence shall commence on the date of the approval of this licence by the Governor in Council and, subject to Condition 4, shall end on the 31st day of October 1995.
2. The class of inter-utility export transfer authorized hereunder is the sale transfer of firm power and energy.
3. The power and energy to be exported hereunder shall be transmitted over any international power line for which a certificate of public convenience and necessity is in effect.
4. Any exports made by the Licensee hereunder shall be in accordance with Point Lepreau Unit Participation Agreements completed and submitted to the Board on or before 31 December 1985.
5. The total quantity of power that may be exported hereunder shall not exceed 130 megawatts.
6. As a tolerance, the Licensee may export power at a rate momentarily in excess of that set forth in Condition 5 if such excess is caused by
 - (a) electrical short circuit or other uncontrollable circumstances, or
 - (b) inability to control precisely the actual rate of transfer.
7. The quantity of energy that may be exported hereunder in any consecutive twelve-month period shall not exceed 1 138 gigawatt hours.
8. The Licensee, before committing any block of power or energy for export hereunder,
 - (a) shall first offer such power or energy to all economically accessible inter-connected Canadian electrical utilities
 - (b) shall submit the proposed Point Lepreau Unit Participation Agreements to the Board for its approval, together with copies of the offers referred to in Subcondition (a) and the responses thereto, and such other information as the Board may require, and shall not commence exporting until such approval is obtained from the Board.
9. The price to be charged by the Licensee for the power and energy that may be exported hereunder shall not be less than the price computed in accordance with Unit Participation Agreements referred to in Condition 4.
10. The Licensee shall not, without the prior approval of the Board, amend, enter into any agreement in substitution for or in addition to, or terminate any Unit Participation Agreement referred to in Condition 4.
11. The Licensee shall inform the Board if it has exercised its option to supply the Lepreau energy entitlements from alternative sources, pursuant to the Unit Participation Agreements referred to in Condition 4, in such form and detail as the Board may specify, within 15 days of commencing the alternative supply.
12. The Licensee shall, within 15 days after the end of each month comprised in the term of the licence, file with the Board a report in such form and detail as the Board may specify, pertaining to transactions under the licence.

